

IN THE ABSTRACT:

Please insert the following Abstract of the Disclosure at the end of the application. This Abstract is also attached on a separate sheet.

An object producing an acoustic wave is located and identified by passive detection of the acoustic wave. The acoustic wave is defined by different sensors in an array having a plurality of passive acoustic detectors. The sensors produce signals in response to the detection of the acoustic wave. A wavelet derived from an acoustic wave of a known form with which each of the at least three signals correlates, is determined. Time difference of arrival measurements between the at least three signals using correlation intensity with the wavelet is used to performed acoustic reciprocity from each of the different detectors. The result of the acoustic reciprocity is a hemisphere centered around each of the different sensors. The hemispheres produced by the acoustic reciprocity are examiner to determine an intersection point of at least three hemispheres. The size of the hemispheres is increased according to the velocity of the acoustic wave and pre-determined intervals until an intersection point is found. The intersection point represents the location of the object.

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